

State of the Estuaries 2003

Phil Trowbridge
NH Estuaries Project
October 20, 2003

State of the Estuaries Report

Status and trends of
12 key indicators

Coastal
watershed
partnerships

Case study on
protecting
habitats around
Great Bay

Case study on
shellfish in
Hampton/
Seabrook
Harbor

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Major Themes of Report

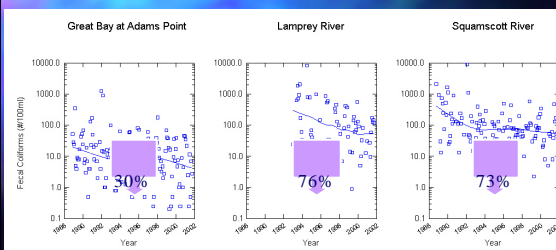
- NH's estuaries are in good condition
 - Water quality has improved
 - Conservation efforts have been successful
- However,
 - Shellfish resources are declining
 - Development pressures are growing

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Improvements in Water Quality

Bacteria
Toxic Contaminants
Dissolved Oxygen

Dry-weather bacteria concentrations



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Toxic Contaminants in blue mussel tissue

PCBs have
declined 49%

DDTs have
declined 1,350%

PAHs have
increased 30%

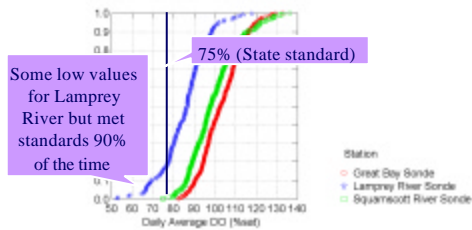
Mercury is
unchanged

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Dissolved Oxygen

Daily Average DOSAT for July, August, and September, 1995-2001

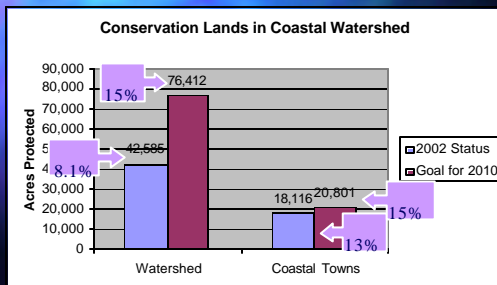


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Conservation Successes

Land Protection
Unfragmented Lands
Salt Marsh Restoration
Eelgrass Coverage

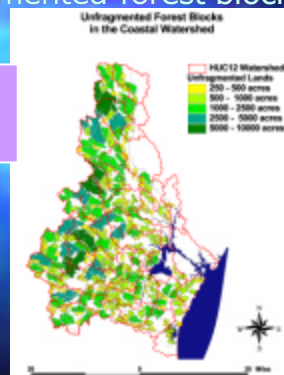
Conservation Lands in Coastal Watershed



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Unfragmented forest blocks

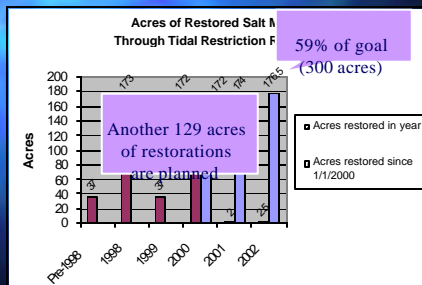
Unfragmented blocks cover 50% of watershed



9.6% of unfragmented blocks are protected from development

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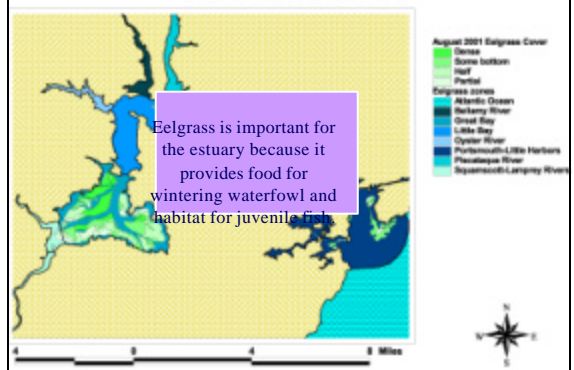
Restored salt marshes



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Eelgrass Cover in the Great Bay Estuary

Data Source: UNH/UES Seagrass Ecology Group



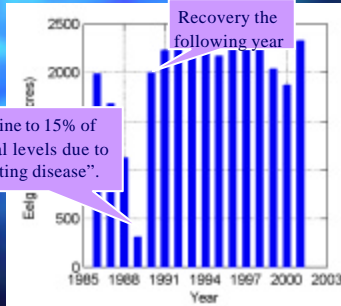
Eelgrass recovery

Decline to 15% of normal levels due to "wasting disease".

Recovery the following year

Year	Eelgrass (m²)
1985	2000
1986	1000
1987	1500
1988	1000
1989	500
1990	1000
1991	2200
1992	2000
1993	2100
1994	2200
1995	2200
1996	2200
1997	2200
1998	2100
1999	2000
2000	1800
2001	2000
2002	2200
2003	2300

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Recovery the following year



Shellfisheries in decline

Oysters
Soft-shell clams

Oysters

Oyster beds in Great Bay

Figure 5-1: Major Oyster Beds in Great Bay.

The map shows the coastline of Great Bay, New Hampshire, with major oyster beds highlighted in red. The legend indicates that red areas represent major oyster beds, blue areas represent minor oyster beds, and green areas represent oyster reefs. The map also shows the locations of major oyster beds, including Adams Pt, Nannie Is, and others. The map includes a scale bar and a north arrow.

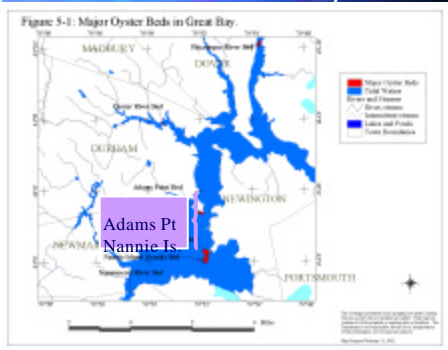
Legend:

- Major Oyster Beds
- Minor Oyster Beds
- Oyster Reefs
- Oyster Beds
- Oyster Reefs
- Oyster Beds
- Oyster Reefs

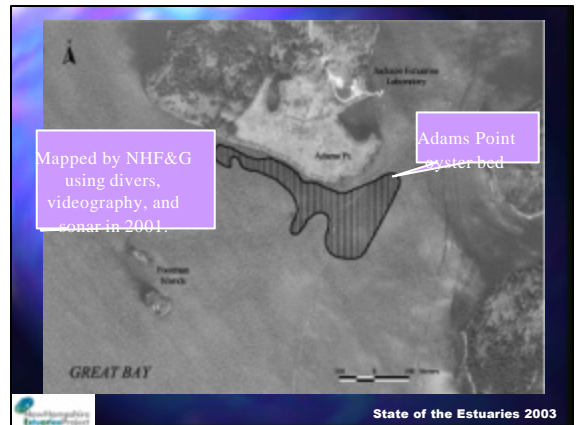
Scale: 0 to 10 Miles

North Arrow

Source: New Hampshire Department of Fish and Game, 1998



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Adams Point
oyster bed

Abundance of harvestable oysters in Great Bay

Major cause: the diseases “MSX” and “Dermo”

Stock of Harvestable-Size Oysters in Great Bay

NHEP Goal: 50,000 bushels

7% of goal

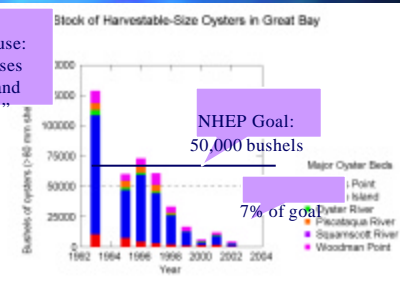
Major Oyster Beds

- Point of View
- Island
- Little Neck
- Peconic River
- Sags River
- Woodman Point

Number of oysters ($\times 10^6$) on date

Year

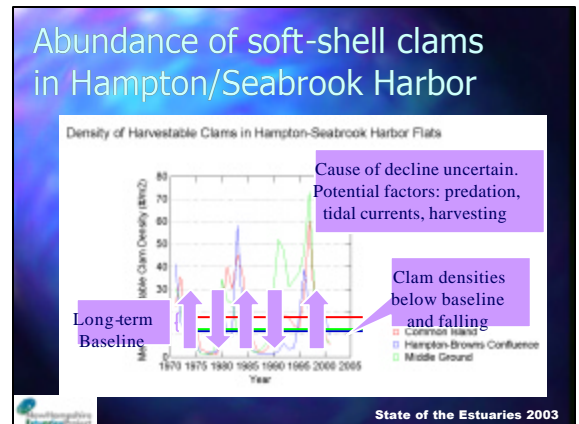
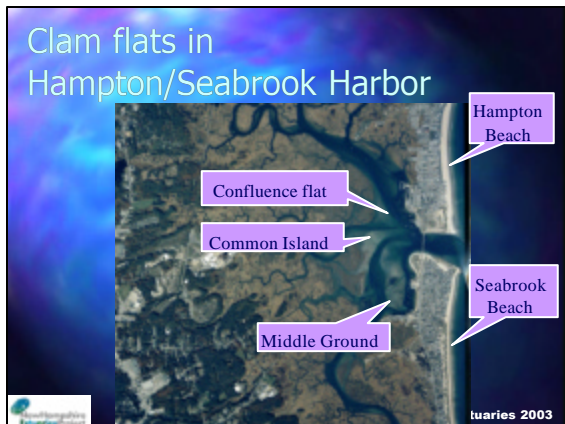
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NHEP Goal:
50,000 bushels

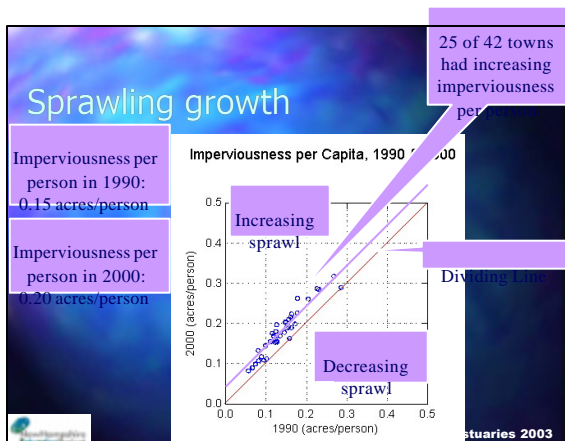
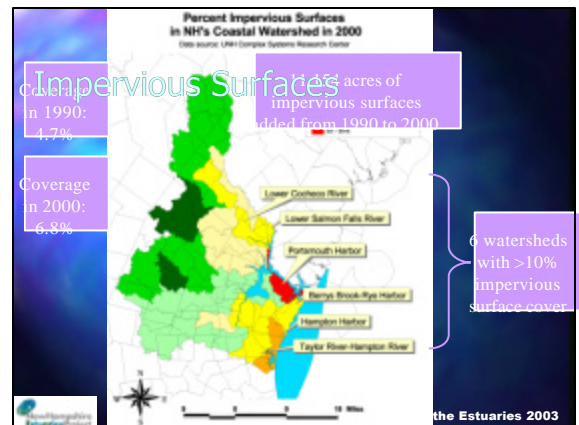
Major Oyster Beds

- Point
- Island
- Bay



Development pressures

Impervious Surfaces
Sprawl
Nutrient enrichment



Increasing nitrogen concentrations

The major sources of nitrogen are all related to population growth and development

No signs of eutrophication yet but we do not know how much is too much

Significant increase over the past 13 years

This slide was altered to accommodate the .pdf file format. Contact the presenter for complete presentation - NHEP

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Conclusions for 2003

- NH's estuaries are in good condition
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- However,
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Additional Information

- More detailed Indicator Reports
- NHEP Monitoring Plan

Available at:

webster.state.nh.us/nhep/Monitoring/monitoring.htm



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Additional Questions

Phil Trowbridge
NHEP Coastal Scientist
NH Department of Environmental Services
603.271.8872
ptrowbridge@des.state.nh.us



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